Natural gas-fired industrial, commercial and institutional boilers, steam generators, process heaters and water heaters

Stakeholder meeting 3/4/10

Attendees

Richard Pare, All State Construction
Jeff Krawic, Commercial Heating Supply
Malcolm Brodie, Commercial Heating Supply
Ray Leduc, Combustion Installations
Brian Carllo, Combustion Installations
Dean Pietrorazio, Connecticut Combustion Corporation
Ric Pirolli, CTDEP
Wendy Jacobs, CTDEP
Robin Baena, CTDEP
Mike LaFleur, CTDEP

Discussion prior to the meeting

Dual fuel equipment can't get to 9 ppmvd
FGR not used for oil recirculation
Issues with biofuels – NORA (Northern oil research association)-Shane Tyson (biodiesel expert)
Oil-fired burners have to have UL labels. Biodiesel burners do not have to have UL labels.

Meeting Notes

Jeff: There are smaller sized high efficiency units out there. They are 2.6 x the cost of standard sized systems (that are 84% efficient). Condensing boiler technology is supposedly 93-97% efficient, but that is only actually achieved when condensing occurs. When operating at 87% efficiency though, NOx is still at the lower level. Efficiencies are not as high as are claimed, even though NOx is reduced. This is for gas only.

Dean: From the contracting end, we'd love to see something in terms of enforcement for testing. Jeff: Opacity equipment was required to be installed, but tests were never done. This should be followed up on.

Malcolm: Even though this is for new units, this proposal will still result in high costs. Dean: Testing enforcement does not have to result in high costs. Ric: We proposed an annual tune-up provision previously. Are we increasing efficiency or reducing NOx? Brian: It's really a safety issue. Malcolm: What about testing gas valves? Does anyone do that? Dean: People don't seem to know what's going on at the user end. Brian: It would be good to make them get a test every year. Ric: We are talking about NOx now, but we have other air pollution issues (CO, CO2, PM). Brian: The first step should be for tune-up provisions. Ric: All of our regulations get voted on. Jeff: We have CO regulations, but is it checked? There are 400 ppm national standards. You can take CO ppm readings. Several manufacturers have monitors on the market (Bacharach.com)

Jeff: There are boilers out there that meet 9 ppmvd and under (gas-fired). Dual-fuel boilers meet 30-60 ppmvd, oil-fired meet 90 ppmvd. Ric: Nursing homes are required to have back up fuel. Other things may have that requirement as well. Wendy: What are percentages for different types of units sold (dual fuel and gas)? Jeff: About 1 year ago we had a change due to economics (natural gas cheaper now).

Dual fuel is for 15-20 gal and above inputs. Can't do oil in small units. Ray Babbington built his own boiler.

Ric: How do some of these rebate programs work? Jeff: Rebates on gas side want 97% efficiency. 50K rebate for 97% efficiency. 30K rebate for 84% efficiency. Gas company gives the difference in cost. Can never go back to oil. Brian: We have a job in MA. The gas company is footing the bill. It will be payed off when it's running. Ray: PE must sign off that gas emissions reduced. No test is required; they just have to make sure that equipment is running. No high efficiency units have the longevity of old units. The lifespan of higher efficiency condensing boilers has not been determined yet. It depends on the installation. A cast iron boiler will last a lot longer. Brian: We have people replacing burners so they can still burn no. 6 oil. Ray: There's a forging plant that has an albatross boiler. The forging plant is afraid they can't get a permit for no. 6 oil, so they will keep their old unit. They are doing FGR at EB and Southbury Training School.

Dean: It seems like you're taking something that is not regulated at all and applying pretty strict numbers. Especially for atmospheric units. Maybe it would be good to phase it in instead. Brian: Tuning for CA takes 8 hours to get their low numbers whereas here tuning can be done in 2 hours. Ric: We're trying to make sure that numbers are reasonable and achievable. Brian: I don't know that service techs would be able to reach these numbers. There are a lot of people that don't understand combustion enough. Combustion changes drastically just based on temperature. Combustion can change dramatically from day to night. Jeff: Probably 1 out of 75 people could do low NOx adjustment. Malcolm: We should have 2 licenses, one for lower inputs and one for higher inputs. Brian: If you buy a natural gas powered car, you might not be best served by bringing it to a regular car dealer. Jeff: No one offers low NOx adjustment classes in CT. Ric: This would seem to be an opportunity for a green job. Dean: The manufacturing end keeps people up to date. Malcolm: There are very few young people in this industry who turn out to be good mechanics. Jeff: Some days I spend 4-5 hours doing troubleshooting for getting equipment to run right.

Dean: Is there any consideration on getting grants from DEP? Ric: There are some boards in CT that provide grants. CAB, ECMB. We've talked about how to get buildings with oversized boilers fitted with more appropriate sized boilers. Wendy: What are percentages of units sold in terms of fuel? Malcolm: New oil units – 15%, dual fuel units – 35-40%, straight gas – 45% (this doesn't add up to 100% though). Gas must be available and the pressure must be available for natural gas installation.

Jeff: There is information out there: Dan Hollahan, heatinghelp.com, the wall (bulletin board style, question and answer thread style), wetheads (steam, hot water). Department of Public Safety gives an annual stamp. Fuel oil news magazines give numbers for region on boilers sold. AGA – American Gas Association. Dean: Sales figures accurately reflect the market. Gas costs have gone down. There's a physical size limitation for the ability to go to dual fuel. It becomes cost prohibitive. Dual fuel units are usually in the larger sizes. The association of energy engineers meet monthly.

Ric: What do you look at when doing tune ups? Jeff: Stack test net CO2%. Brian: You can put O2 trim on larger units that can be adjusted. Jeff: It costs 12K. Brian: NFPA 85 should have means of monitoring and recording fuel input and BTU output. Ray: Bay State utility is giving an incentive for people to burn less gas. Richard: Do you know how many 2 MMBtu boilers are in CT? Malcolm: Every boilers has to be registered with the State of CT. I don't think you should start with 9 ppmvd.

Ric goes over the next steps. If CTDEP decides to pursue a regulation we will set up stakeholder meetings. We'll keep you informed.